

Mindfulness, Neuroscience and Creativity: An Interactive Exploration

Robert M Bilder, PhD

Tennenbaum Family Endowed Chair

in Creativity Research at UCLA

Semel Institute for Neuroscience & Human Behavior

Definitions of Creativity

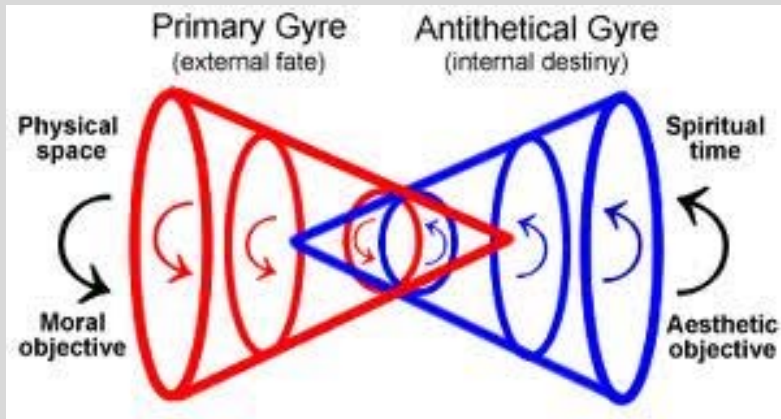
Novelty



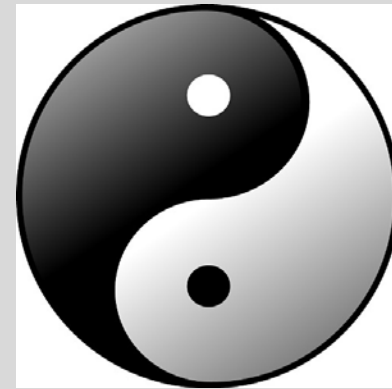
Chaos Theory
Fractal Art by Vicky Brago-Mitchell

Utility

Creativity is at the edge of chaos...



Yeats: *A Vision*
The Gyres
 (1925, 1937)



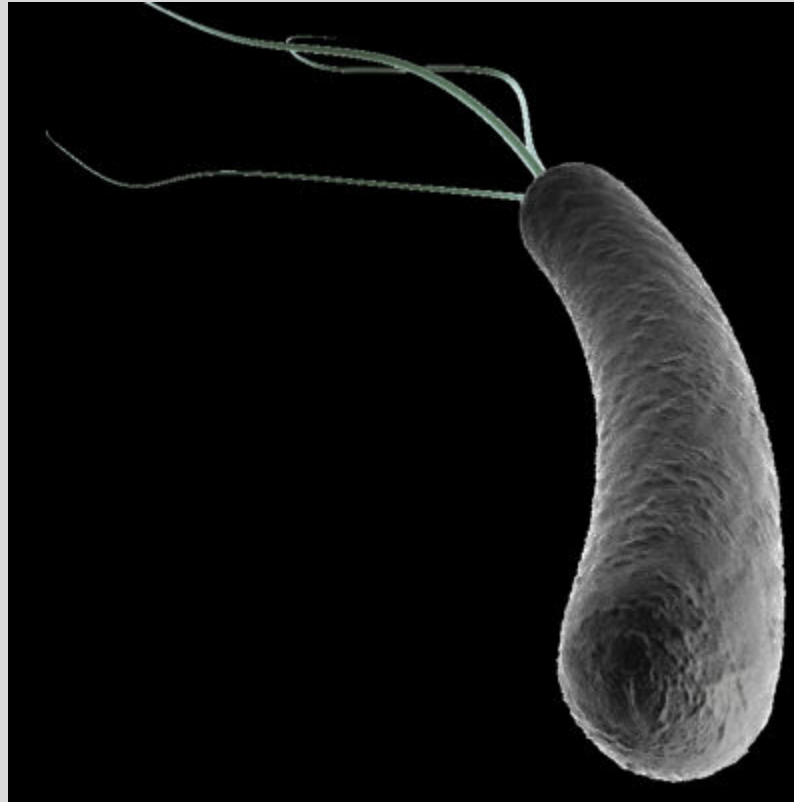
Taoism
Yin-Yang
 ~800 BCE



Dpal be'u
Eternal Knot
 ~2500-2000 BCE?

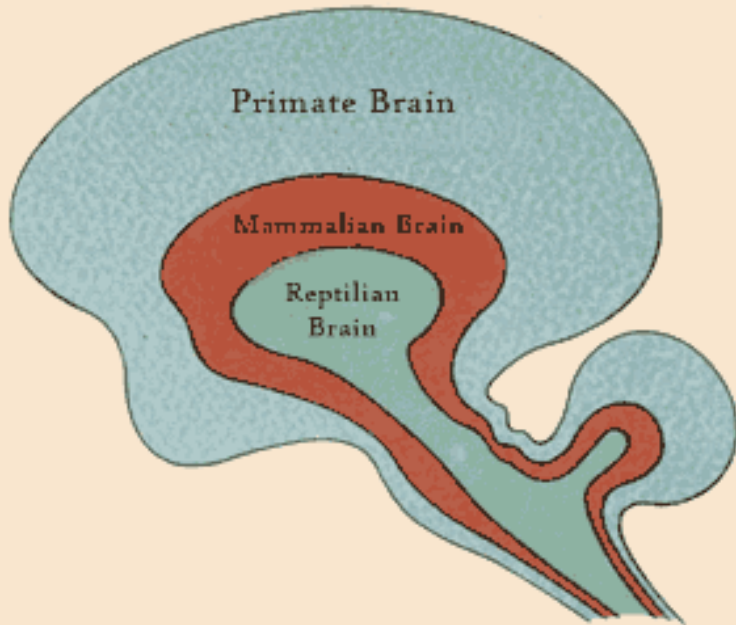
Creative Biology: An Early Edition

Output

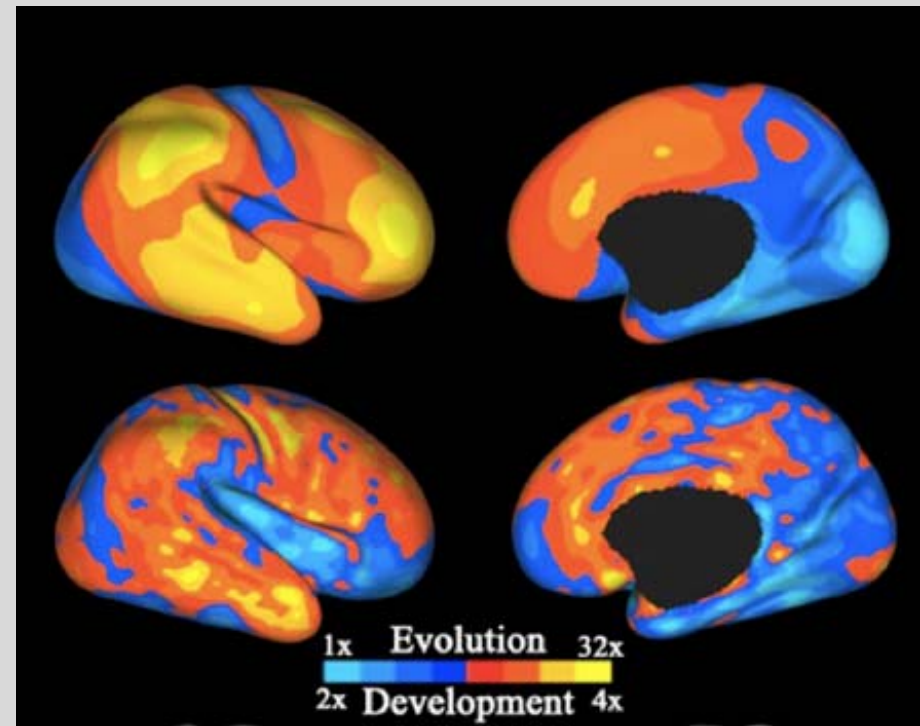


Input

The Triune Brain



MacLean 1990

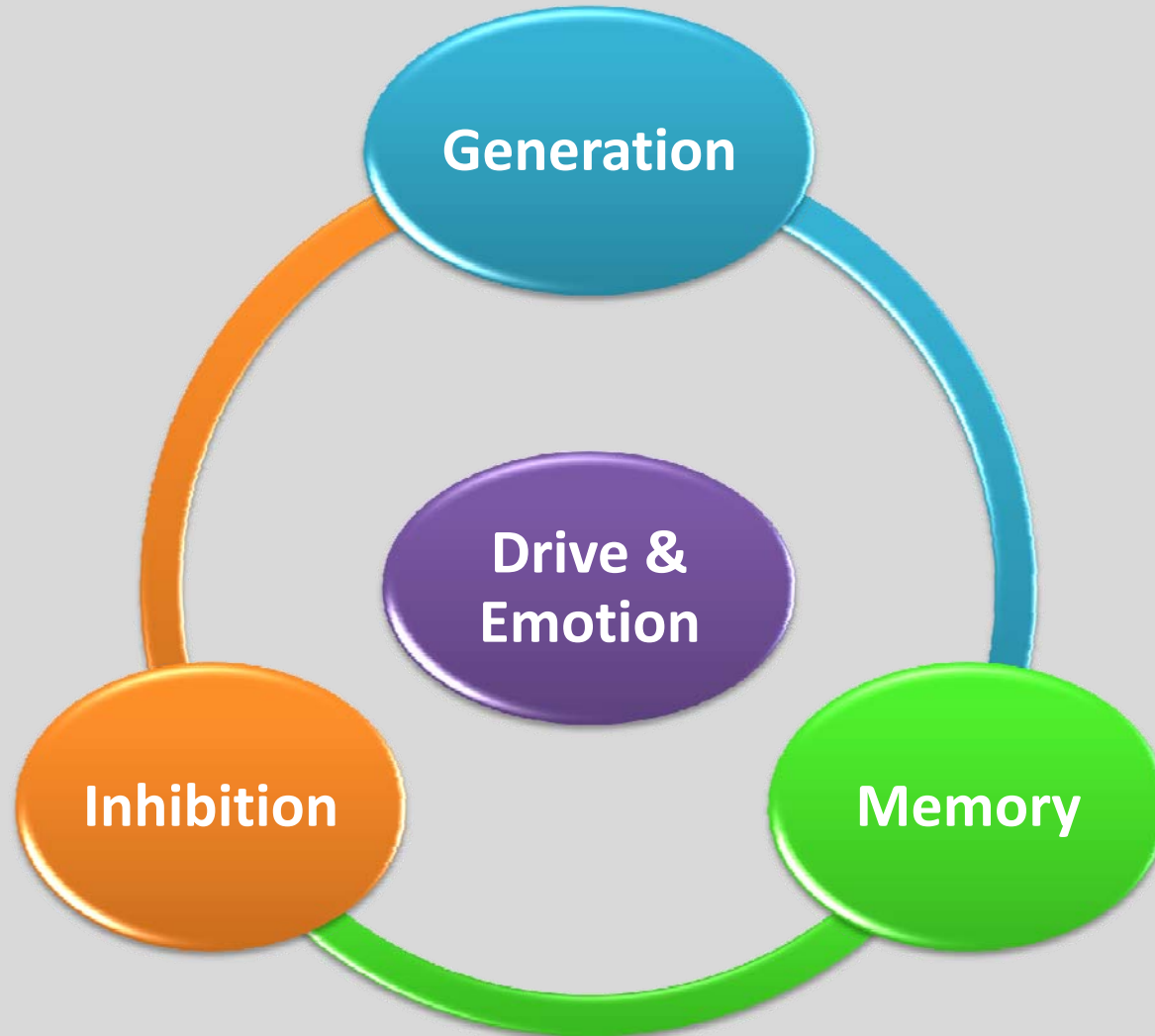


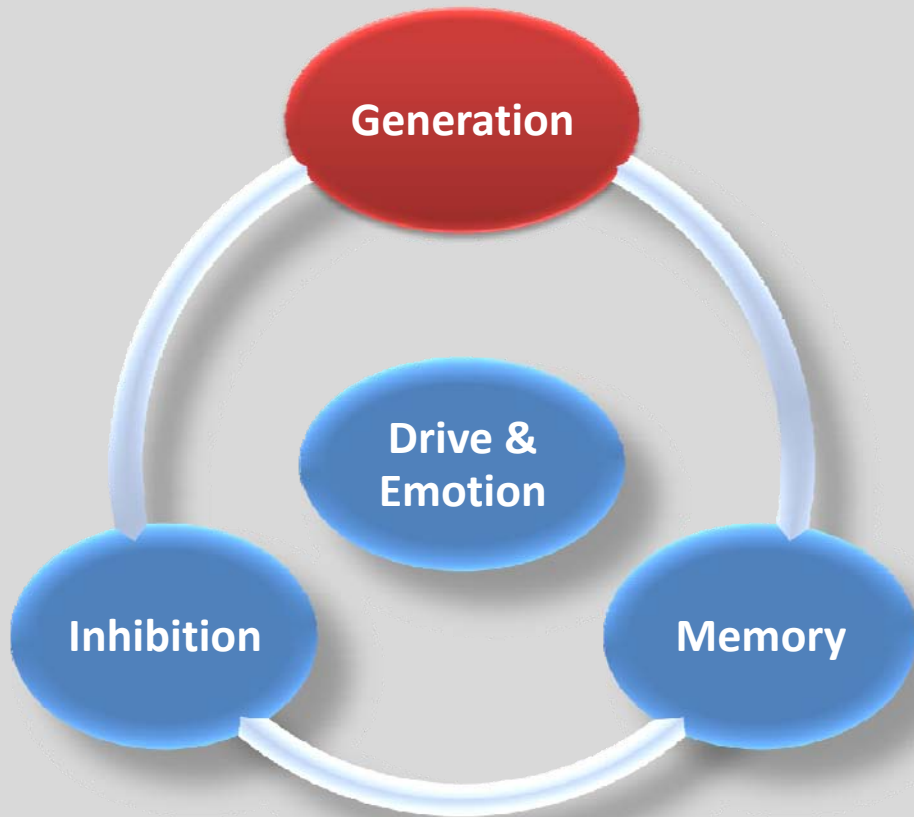
Hill et al., 2010

1 billion years and 100 billion cells later...

Evolution → enormous integration of incoming sensory stimuli, and elaborate plans for action

Foundations of Creative Cognition



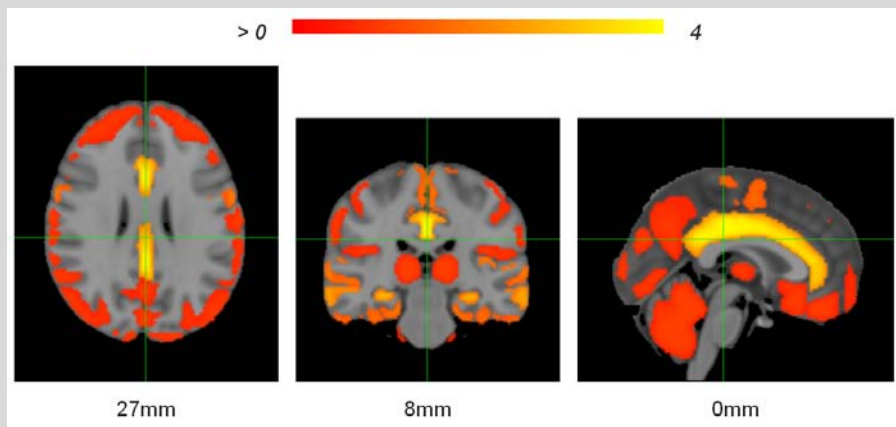


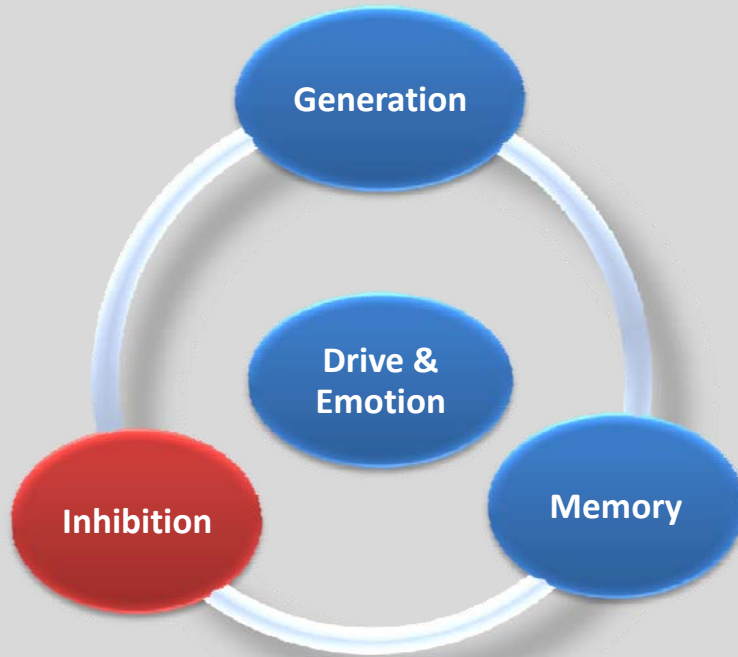
Generation

Most creative products come from people who generate the most products

Consider Gladwell's 10,000 hours...

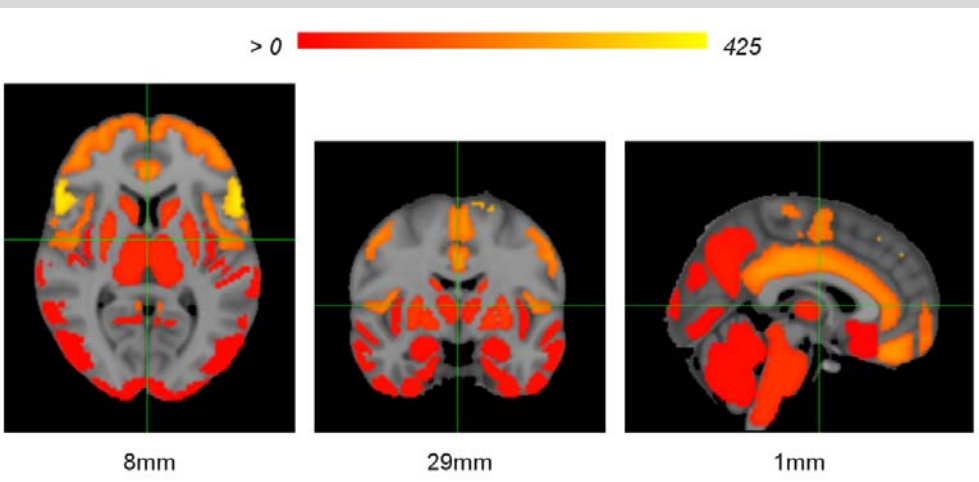
And Stephanie White's songbirds!





Inhibition

To foster innovation we need to inhibit habits and go beyond the first thing that comes to mind

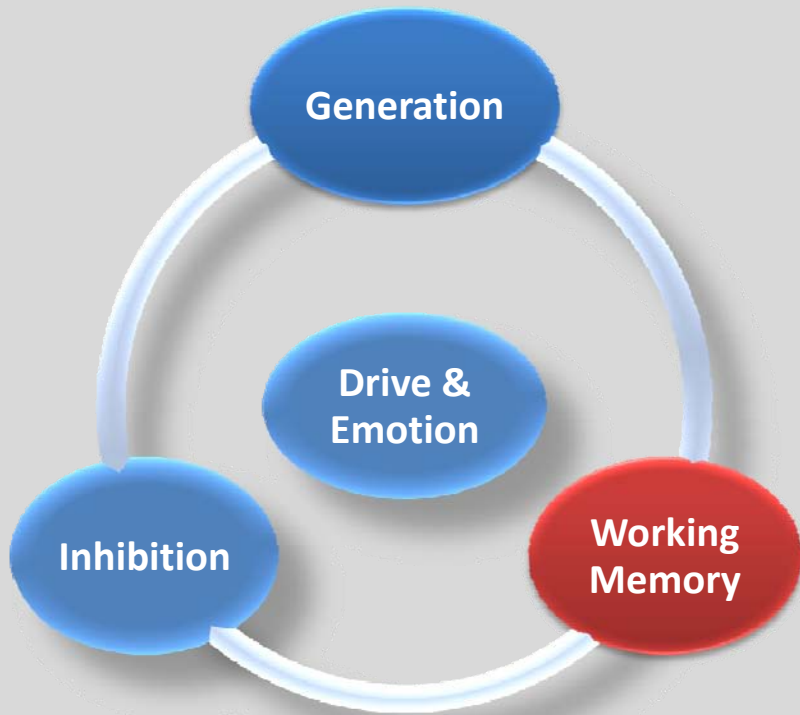


Consider David Jentsch's gene discovery for 'reversal'

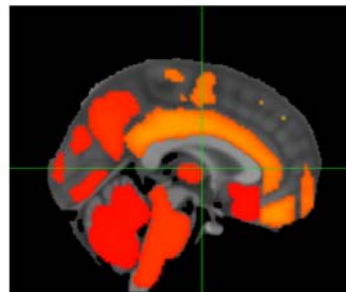
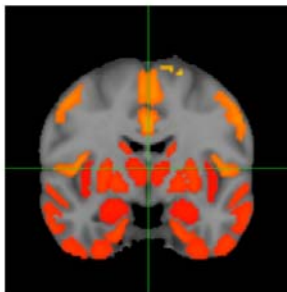
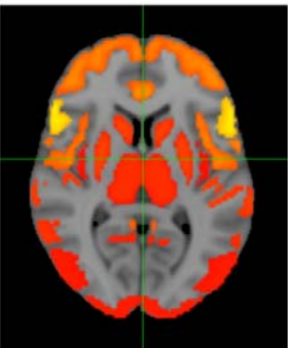
Memory and Working Memory

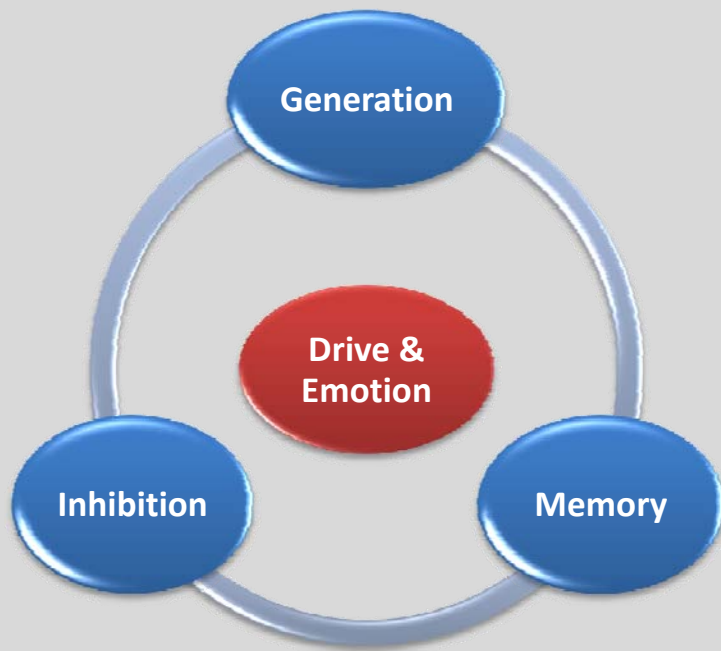
To generate novel ideas, we need to *maintain* multiple ideas in mind, and *manipulate* these to yield new connections and new concepts

Consider Alcino Silva's "smart mice"



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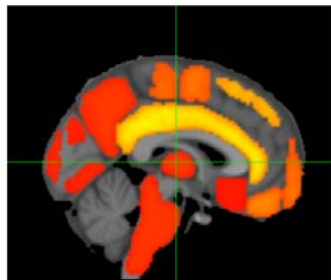
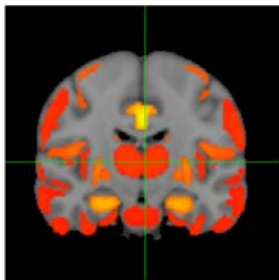
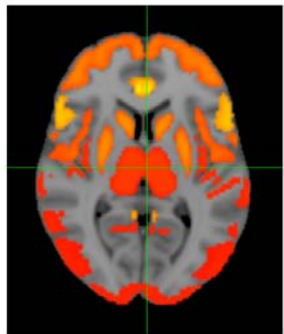


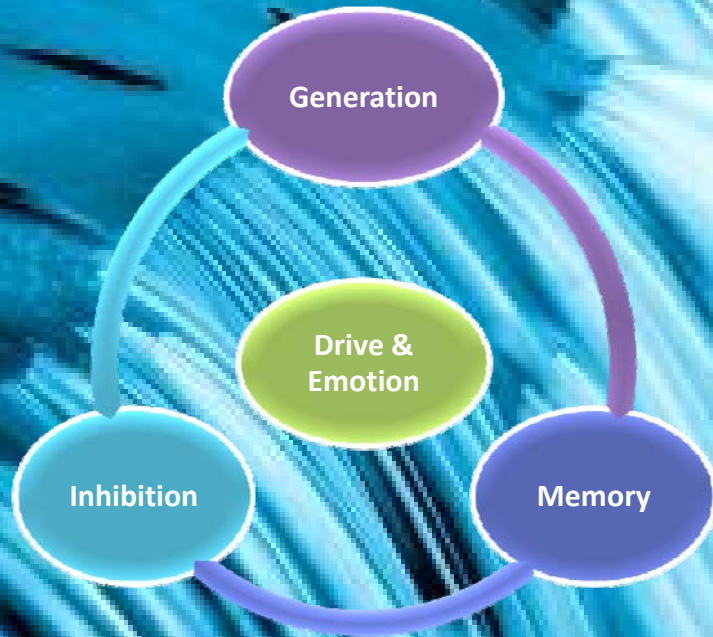
Drive & Emotion

Connection to core motivational systems drives action *and* perception

Links to the visceral brain and somatic states also connect narrative with emotion, feeling states

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FLOW: An almost automatic, effortless, yet highly focused state of consciousness
- Csikszentmihalyi

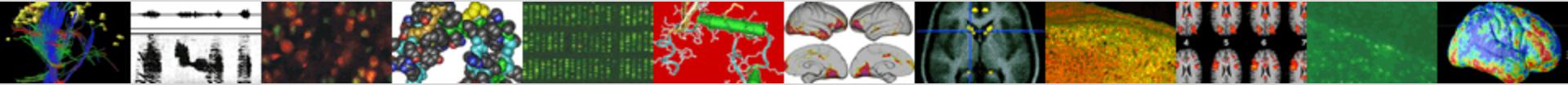
Balancing Stability & Flexibility → *Flow*

- High generativity, productivity
- Flexible memory combination
- Successfully inhibiting intrusive habits
- Connecting drive to action & perception

Mindfulness ↔ Bodyfulness

- Dual brain systems
 - Stability vs. Flexibility
 - Somatomotor vs. Visceroautonomic
 - Muscles for action vs. Internal perception
 - Focused vs. Broad attention
 - Stabilizing vs. Discursive meditation practice
 - Attention research of Lobsang Rapgay
- Linking lungs, heart, gut, and kinesthetic senses to cognition → creative combinations

Thanks!



Our mission:

To study the molecular, cellular, systems and cognitive mechanisms that foster creativity and advance application of these principles to promote health and well-being.

www.semel.ucla.edu/creativity

rbilder@mednet.ucla.edu



Michael E.
Tennenbaum